

Entergy Operations, Inc. P. O. Box 756 Port Gibson, MS 39150

Christina L. Perino Director, Nuclear Safety Assurance Grand Gulf Nuclear Station Tel. (601) 437-6299

GNRO-2013/00005

March 4, 2013

U.S. Nuclear Regulatory Commission

Attn: Document Control Desk Washington, DC 20555-0001

SUBJECT:

Licensee Event Report 2013-001-00 Reactor Protection System Actuation

Due to a Main Turbine Generator Trip Grand Gulf Nuclear Station, Unit 1

Docket No. 50-416 License No. NPF-29

#### Dear Sir or Madam:

Attached is Licensee Event Report 2013-001-00, which is a final report. This report is submitted in accordance with Title 10 Code of Federal Regulations 50.73(a)(2)(iv)(A).

This letter contains no new commitments. If you have any questions or require additional information, please contact Christina L. Perino at (601) 437-6299.

Sincerely,

CLP/ras

Attachment: Licensee Event Report (LER) 2013-001-00

Same Meders

cc: (see next page)

# GNRO-2013/00005 Page 2 of 2

cc: U. S. Nuclear Regulatory Commission ATTN: Mr. Elmo E. Collins, Jr. Regional Administrator, Region IV 1600 East Lamar Boulevard Arlington, TX 76011-4511

> U. S. Nuclear Regulatory Commission ATTN: Mr. Alan Wang, NRR/DORL Mail Stop OWFN/8 B1 11555 Rockville Pike Rockville, MD 20852-2378

NRC Senior Resident Inspector Grand Gulf Nuclear Station Port Gibson, MS 39150

# Attachment to

GNRO-2013/00005

Licensee Event Report (LER) 2013-001-00

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| U.S. NUCLEAR REGULATORY COMMISSION (10-2010)  LICENSEE EVENT REPORT (LER)  |  |  |  |  | Estimate request: licensing estimate Commis   | APPROVED BY OMB: NO. 3150-0104 EXPIRES: 10/31/2013  Estimated burden per response to comply with this mandatory collection request: 80 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the FOIA/Privacy Section (T-5 F53), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to infocollects.resource@nrc.goy, and to the Desk Officer, Office of Information |  |   |  |                       |  |  |  |  |
|  |  |  | and Re<br>and Bu   | and Regulatory Affairs, NEOB-10202, (3150-0104), Office of Management and Budget, Washington, DC 20503. If a means used to Impose an   |   |   |  |   |  |                       |  |  |  |  |
| (See reverse for required number of digits/characters for each block)  |  |  |  |  |   | information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.   |  |   |  |                       |  |  |  |  |
| 1. FACILITY NAME   |  |  |  |  |   | 2. DOCKET NUMBER  |  |   | 3. PAGE  |                       |  |  |  |  |
| Grand Gulf Nuclear Station, Unit 1 05000 416 1 OF 4  |  |  |  |  |   |   |  |   |  |                       |  |  |  |  |
| Reactor Protection System Actuation Due to a Main Turbine Generator Trip   |  |  |  |  |   |   |  |   |  |                       |  |  |  |  |
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| 01 (   | 04 2013  | 2013-  | 001-00   | 03   | 05 2013   | N/A   |  |   | N/A  |                       |  |  |  |  |
| 9. OPERATING MODE 11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check all that apply)  |  |  |  |  |   |   |  |   |  |                       |  |  |  |  |
|  | 4  | 20.2201(b)   |  | 20.2203(a)(3   |   | 50.73(a)  |  |   | 3(a)(2)(   |                       |  |  |  |  |
|  | 1  | 20.2203(a)(3)(ii) 20.2203(a)(3)(ii) 20.2203(a)(4)  |  |  |   | ☐ 50.73(a)(2)(ii)(A)<br>☐ 50.73(a)(2)(ii)(B)  |  | ☐ 50.73(a)(2)(viii)(A)<br>☐ 50.73(a)(2)(viii)(B)  |  |                       |  |  |  |  |
| 40.004   |  | 20.2203(a)   | 2)(i)  | 50.36(c)(1)(i  | )(A)  | 50.73(a)  | (2)(iii)   | <u> </u>  | 3(a)(2)(   | x)(A)                 |  |  |  |  |
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| ç  | 94   | 20.2203(a)(  |  | 50.36(c)(2)<br>50.46(a)(3)(i   | i)  | 50.73(a)  | 73.7<br>73.7   |   |  |                       |  |  |  |  |
|  | , ,  | 20.2203(a)   | 2)(v)  | 50.73(a)(2)(i  | •   | ☐ 50.73(a)(2)(v)(C) ☐ OTHER   |  |   |  |                       |  |  |  |  |
|  |  | 20.2203(a)   | 2)(vi)   | 50.73(a)(2)(i  | )(B)  | 50.73(a)  | (2)(v)(D)  |   | y in Abst  | ract below<br>n 366A  |  |  |  |  |
|  |  |  | 12. LI   | CENSEE CONTA   | CT FOR THIS   | LER   |  |   |  |                       |  |  |  |  |
| FACILITY NAME  Jeffery A. Seiter / Acting Licensing Manager  TELEPHONE NUMBER (Include Area Code) (601) 437-2344 |  |  |  |  |   |   |  |   |  |                       |  |  |  |  |
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#### NRC FORM 366A U.S. NUCLEAR REGULATORY COMMISSION LICENSEE EVENT REPORT (LER) (10-2010)**CONTINUATION SHEET** 1. FACILITY NAME 2. DOCKET 6. LER NUMBER 3. PAGE YEAR SEQUENTIAL REV. NUMBER NO. 05000 416 2 OF 4 Grand Gulf Nuclear Station, Unit 1 2013 -- 001 -- 00

#### NARRATIVE

## A. REPORTABLE OCCURRENCE

This Licensee Event Report (LER) is being submitted pursuant to Title 10 Code of Federal Regulations (10 CFR) 50.73(a)(2)(iv)(A) for an automatic actuation of the Reactor Protection System (EIIS:JC) (RPS). Telephonic notification was made to the U.S. Nuclear Regulatory Commission (NRC) Emergency Notification System on January 5, 2013, within 4 hours of the event pursuant to 10 CFR 50.72(b)(3)(iv)(A).

### **B. INITIAL CONDITIONS**

At the time of the event the reactor was in operational mode 1 with reactor power at 94 percent. There were no additional inoperable structures, systems, or components at the start of the event that contributed to this event.

#### C. DESCRIPTION OF OCCURRENCE

At 23:37 Central Standard Time on January 4, 2013, Grand Gulf Nuclear Station experienced an unexpected Reactor SCRAM caused by a Main Generator (EIIS:TB) trip. The plant was operating in Mode 1 at 94 percent thermal power. All safety systems responded per design. Safety Relief Valves (EIIS:RV) (SRVs) opened at the onset of the event to control reactor pressure and reseated properly. All control rods (EIIS:ROD) inserted when the signals generated by the RPS were received. There were no Emergency Core Cooling System actuations. The shift immediately entered the appropriate Off Normal Event Procedures. The plant was stabilized with pressure control on the main turbine bypass valves (EIIS:PCV) and level control on the start-up level control valve (EIIS:LCV). High pressure feedwater heater start-up outlet valve (start-up outlet valve) 1N21F010B did not open when the start-up level control valve was placed in service but did not prevent Operations from controlling the reactor water level. The plant responded to the trip as designed with the exception of the one start-up outlet valve noted above.

### D. CAUSE

The cause of the SCRAM was the Main Generator 'A' Phase Neutral Current Transformer (EIIS:XCT) (CT) experienced partial grounding due to inadequate clearance between the micarta plate bolts and bottom of the CT allowing the conductors to come in contact with a bolt providing a shunt path to ground. This was caused by inadequate workmanship and inadequate work instructions not specifying the clearance during installation.

#### NRC FORM 366A U.S. NUCLEAR REGULATORY COMMISSION LICENSEE EVENT REPORT (LER) (9-2007)**CONTINUATION SHEET** 1. FACILITY NAME 2. DOCKET 6. LER NUMBER 3. PAGE SEQUENTIAL YEAR REV. NUMBER NO. 05000 416 3 OF 4 Grand Gulf Nuclear Station, Unit 1 2013 -- 001 -- 00

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# **E. CORRECTIVE ACTIONS**

Removal and/or thread cutting of the micarta plate bolts to ensure minimum cold clearance of 0.5 inch between the CT and the micarta plate bolts was completed on January 6, 2013.

For each main generator CT, the Post Maintenance Test special requirement planning notes will be revised to ensure that 0.5 inch cold clearance is maintained between the micarta plate bolts and the main generator CTs.

Plant personnel will perform boroscopic inspection of CTs and add work instruction steps that include Entergy hold points to ensure adequate cold clearance of 0.5 inch is maintained between the micarta plate bolts and the main generator CTs.

Applicable drawings will be revised to incorporate a minimum cold clearance of 0.5 inch to be maintained between the CT and micarta plate bolts.

### F. SAFETY ASSESSMENT

The event posed no threat to public health and safety as the RPS performed as designed. All safety systems responded as designed. The breaker thermal for the 1N21F010B start-up outlet valve was reset and returned to service and did not prevent Operations from controlling the reactor water level.

Immediate actions performed by the Operations staff were adequate and appropriate in placing and maintaining the reactor in a safe shutdown condition.

Nuclear safety was not significantly compromised because safety related equipment necessary to safely shutdown the unit performed its safety function.

During the event, no Technical Specification defined Safety Limits were challenged.

Radiological Safety was not affected since there was no radiological release to the public during the event.

Response of the crew did not challenge established industrial safety protocol or requirements. There was no impact to the safety of the public, industrial safety or radiological safety as a result of this event.

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### G. ADDITIONAL INFORMATION

The cause was the same as the December 29, 2012, SCRAM, which is addressed in LER-2012-008-00 and CR-GGN-2012-13290. The instruments installed following the December 29, 2012, SCRAM enabled the determination of the cause of both SCRAMs. CR-GGN-2008-01476 documents a CT-related SCRAM but was not caused by CT grounding. The CT that caused both the December 29, 2012, SCRAM and the January 4, 2013, SCRAM was installed between February and April 2012.

The cause of start-up outlet valve 1N21F010B not opening was determined to be a thermal overload breaker trip. The breaker thermal was reset and the valve was returned to service. CR-GGN-2012-13297 documents this issue and the corrective actions that will be taken as part of a work order during the next refueling outage.